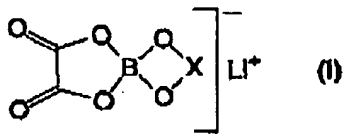
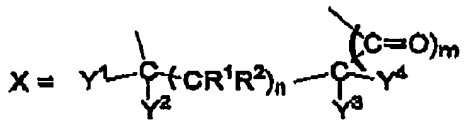
Claims

1. A conducting salt containing lithium bis(oxalato)borate (LiBOB) and mixed lithium-borate salts of the type



(I)

wherein the proportion of compound (I) in the conducting salt amounts to 0.01 mol.% to 20 mol.% and X in formula (I) is a bridge which is linked to the boron by two oxygen atoms and which is selected from



wherein

- Y^1 and Y^2 together signify O, m = 1, n = 0, and Y^3 and Y^4 are, independently of one another, H or an alkyl residue with 1 to 5 C atoms, or
- Y^1, Y^2, Y^3, Y^4 are in each case, independently of one another, OR (with R = alkyl residue with 1 to 5 C atoms), or H or an alkyl residue with 1 to 5 C atoms, and where m = 0 or 1, n = 0 or 1, or
- Y^2 and Y^3 are members of a 5-membered or 6-membered aromatic or heteroaromatic ring (with N, O or S as heteroelement), which may be optionally substituted with alkyl, alkoxy, carboxy or nitrile, in which case Y^1 and Y^4 are not applicable and n = 0, m = 0 or 1.

2. A conducting salt according to Claim 1, characterised in that compound part X is formed from 1,3-dicarboxylic acids formally lessened by two OH groups.

3. A conducting salt according to Claim 2, characterised in that the 1,3-dicarboxylic acid is malonic acid or an alkylmalonic acid.

4. A conducting salt according to Claim 1, characterised in that compound part X is formed from 1,2- or 1,3-hydroxycarboxylic acids formally lessened by two OH groups.

5. A conducting salt according to Claim 4, characterised in that the 1,2-hydroxycarboxylic acid or 1,3-hydroxycarboxylic acid is glycolic acid or lactic acid.

6. A conducting salt according to Claim 1, characterised in that compound part X is formed by saturated C_2 chains or saturated C_3 chains..

7. A conducting salt according to Claim 1, characterised in that compound part X is formed from 1,2-bisphenols or from 1,2-carboxyphenols (such as salicylic acid) or from aromatic 1,2-dicarboxylic acids (such as phthalic acid) or pyridine-2,3-diol, these compounds having been formally lessened by two OH groups.

8. A conducting salt according to Claim 7, characterised in that the 1,2-bisphenol is pyrocatechol, the 1,2-carboxyphenol is salicylic acid, and the 1,2-dicarboxylic acid is phthalic acid.

9. A process for producing conducting salts according to one or more of Claims 1 to 8, characterised in that a suitable boron compound, oxalic acid, a suitable chelating agent L_2 and a suitable lithium compound are mixed, the molar ratio of the substances employed (boron compound / mixture of oxalic acid and chelating agent L^2 / lithium compound) being 1 : 2 : 1, and the mixture of oxalic acid and chelating agent L^2 containing a maximum of 20 mol.% chelating agent L^2.

10. Process according to Claim 9, characterised in that boric acid is employed as boron compound, and a dicarboxylic acid (not oxalic acid) or hydroxycarboxylic acid is employed as chelating agent L^2.

11. Process according to Claim 9, characterised in that 1,3-dicarboxylic acids, for example malonic acid or an alkylmalonic acid, in which case an alkyl group with 1 to 5 C atoms is preferably employed, 1,2- or 1,3-hydroxycarboxylic acids, for example glycolic acid or lactic acid, 1,2- or 1,3-diols, 1,2-bisphenols, for example pyrocatechol, 1,2-carboxyphenols, for example salicylic acid (which may also be maximally disubstituted) or aromatic or heteroaromatic 1,2-dicarboxylic acids, for example phthalic acid or pyridine-2,3-diol, is employed as chelating agent L^2.

12. Process according to one of Claims 9 to 11, characterised in that the raw-material components are suspended in a medium suitable for azeotropic removal of water (e.g. toluene, xylene, methylcyclohexane, perfluorinated hydrocarbons with more than 6 C atoms), and the water is removed azeotropically in known manner.

13. Process according to one of Claims 9 to 11, characterised in that it is implemented in aqueous solution, the components being charged into water in arbitrary sequence and being concentrated by evaporation subject to stirring, preferably at reduced pressure.

14. Process according to Claim 13, characterised in that alcohols or other polar organic solvents are used instead of water as reaction media.

15. Process according to one of Claims 9 to 11, characterised in that the raw-material components are mixed without addition of a solvent, are heated by

supply of heat, and are dehydrated under preferably reduced pressure.

16. Use of the conducting salts according to one or more of Claims 1 to 8 in galvanic cells.

17. Use of the conducting salts according to one or more of Claims 1 to 8 in lithium-ion batteries.